



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,565	04/22/2004	Chee Chong Hin	70031238-1	6340
57299	7590	05/05/2006	EXAMINER	
AVAGO TECHNOLOGIES, LTD. P.O. BOX 1920 DENVER, CO 80201-1920			PYO, KEVIN K	
			ART UNIT	PAPER NUMBER
			2878	

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/829,565

Applicant(s)

HIN ET AL.

Examiner

Kevin Pyo

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 17-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4/22/04.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Lugaresi (5,241,172).

Regarding claim 1, Lugaresi shows in Figs.7-9 the following elements of applicant's claim: a) a coding element (203) having a track with at least one transparent section; b) a light emitting diode (202) positioned to output light to the track; and c) a photodetector array (Figs.8 and 9) positioned to detect light that passes through the transparent section of the track, the photodetector array comprising first and second photodetectors with different surface areas and a combined width dimension that allows the entire photodetector array to be simultaneously lit by light that passes through the transparent section of the coding element (col.7, lines 1-67).

Regarding claims 2 and 5, the limitations therein are disclosed in col.7, lines 47-51.

Regarding claims 3 and 7, Lugaresi discloses that a width of a principal detector (210) is equal to that of an opaque section of a code wheel (203).

Regarding claim 4, the limitation therein is shown in Figs.8 and 9.

Regarding claim 6, Lugaresi shows in Figs.8 and 9 second and third photodetectors (212 and 214; 312 and 314) are located adjacent to either side of the first photodetector (210; 310).

Art Unit: 2878

Regarding claim 8, Lugaresi shows in Fig.7 an index track (216) and a position track (213, 215) and a position track photodetector array (208) positioned to detect light passes through the transparent sections of the position track.

Regarding claim 9, Lugaresi discloses, in all light condition, a transparent index track with at least one opaque section.

Regarding claim 10, Lugaresi discloses, in all dark condition, an opaque index track with at least one transparent section.

Regarding claim 11, Lugaresi shows in Figs.7-9 the following elements of applicant's claim: a) a coding wheel (203) having an index track (216) with at least one transparent section; b) a light emitting diode (202) positioned to output light to the track; and c) an index photodetector array (Figs.8 and 9) positioned to detect light that passes through the transparent section of the index track, the index photodetector array comprising first and second photodetectors with different surface areas and a combined width dimension that allows the entire index photodetector array to be simultaneously lit by light the passes through the transparent section of the coding wheel (col.7, lines 1-67).

Regarding claims 12 and 15, the limitations therein are disclosed in col.7, lines 47-51.

Regarding claim 13, Lugaresi discloses that a width of a principal detector (210) is equal to that of an opaque section of a code wheel (203).

Regarding claim 14, the limitation therein is shown in Figs.8 and 9.

Regarding claim 16, Lugaresi shows in Figs.8 and 9 second and third photodetectors (212 and 214; 312 and 314) are located adjacent to either side of the first photodetector (210; 310). In

Art Unit: 2878

addition, Lugaresi discloses that a width of a principal detector (210) is equal to that of an opaque section of a code wheel (203).

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Steegmueller et al (6,797,940) is cited for disclosing an optical encoder with triple photodiode.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Pyo whose telephone number is (571) 272-2445. The examiner can normally be reached on Mon-Fri (with flexible hour), First Mon. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin Pyo  
Primary Examiner  
Art Unit 2878

Pkk  
4/23/06